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DEPARTMENT OF AGRICULTURE.

BULLETIN No. 106.

# The Varieties of Fruit That Can Be Profitably Grown in Pennsylvania.

BY

GABRIEL HIESTER, Esq.,

HARRISBURG, PA.



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## PREFACE.

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Harrisburg, Pa., November 1, 1902.

The following Bulletin No. 106, upon "The Varieties of Fruit that Can be Profitably Grown in Pennsylvania," was prepared by Gabriel Hiester, Esq., of Harrisburg, Pa. Mr. Hiester was selected for this work because of his experience in fruit growing, his knowledge of the conditions which prevail throughout the State and which affect the orchardist, and for his conservatism as a writer and speaker.

The fruit industry has been sadly neglected by the State in the past, no effort having been made to foster this industry, for which our soil and climate are specially adapted. Those who did undertake to set out orchards were at a loss to know what varieties of fruit to select, or where to locate them to the best advantage. Nothing but a careful and systematic investigation could determine these important points, and the Department, therefore, instituted such an investigation, the results of which are embodied in this Bulletin. Fruit growers and others who are interested in this branch of farming, can get valuable suggestions from the study of the facts which Mr. Hiester here presents.

JOHN HAMILTON,  
Secretary of Agriculture.



## LETTER OF TRANSMITTAL.

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Hon. John Hamilton,  
Secretary of Agriculture:

Dear Sir: In compliance with your request, I herewith submit Bulletin No. 106, on "The Varieties of Fruit that can be Profitably Grown in Pennsylvania," together with some suggestions as to soil and location.

The object of this bulletin, is to furnish the fruit growers of the State as much information as possible on the subject of the selection of varieties, the selection of soils and the adaptability of the various varieties of fruit to the different sections of the State.

It is intended for the man who is about to plant an orchard, rather than the one who has been engaged in the work for years and has gained knowledge by experience; it is not the opinion of any one man, but represents the combined judgment of over a thousand.

The writer sent out letters of inquiry containing a large number of questions, to 3,000 fruit growers, and received carefully prepared replies from more than a thousand of them; every county and every fruit growing section has been heard from.

After carefully studying and comparing these replies, together with the bulletins that have already been issued by the U. S. Department of Agriculture, and by our own State Experiment Station, and also the works of our most celebrated horticulturists, both past and present, a few general rules have been formulated, a few general principles stated, which, although they may not fit every individual case, it is hoped will help a great many prospective planters to start right, and induce others to turn their unprofitable hillsides and abandoned fields into orchards that may become profitable.

Owing to the rapid spread of insect pests and fungoid diseases, and the methods required to protect our orchards from their ravages, fruit can no longer be grown as a side issue to general farming with any degree of success. The business is passing into the hands of specialists; many unprofitable farms are being converted into orchards; men are buying farms for the sole purpose of raising fruit; while from every county of the State comes the question: "What shall I plant? Where shall I plant it?"

This investigation has brought out a few facts that may be briefly stated as follows:

I. Fruit can be grown with profit in every county of the State.

II. No industry in the State has been so much neglected as the fruit industry.

III. The great majority of farmers report that they bought their trees from tree peddlers, and depended upon their judgment in the selection of varieties. They do not know what varieties they have; they only know that they have a great many worthless ones, and very few good ones.

IV. The subject of spraying has not been carefully studied, and many who have tried it one year gave it up in disgust, because they did not understand the theory, and were not familiar with the details of mixing and applying the various compounds.

V. A great many have sustained loss by planting orchards on thin soil.

Hoping this bulletin may arouse thought and incite discussion on this very important subject, I am

Your obedient servant,

GABRIEL HIESTER.

Harrisburg, Pa., Nov. 1, 1902.

## THE VARIETIES OF FRUIT THAT CAN BE PROFITABLY GROWN IN PENNSYLVANIA.

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BY GABRIEL HIESTER, *Harrisburg, Pa.*

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When a man plants an orchard of apples or pears he is starting in a work that will last his life time. If he selects the wrong location for his orchard, or makes a wrong selection of varieties, even although he may give it the best and most intelligent care later on, he will fail to obtain a full measure of profit for his work.

### LOCATION.

It is difficult to give accurate directions as to the selection of a location for an orchard or to describe a soil that will bring the best results. There are a few general principles, however, that have become firmly established by the experience of the most careful horticulturists extending back through the past century, and have been fully proven by a number of correspondents who have aided in this investigation. There are several points to be considered in selecting a location which apply to all fruits, and may be briefly stated here as follows:

*Soil.*—All fruit trees require a *deep* soil on an open subsoil that will allow perfect drainage. Let me then impress upon the mind of the reader, that the first requisite for the profitable production of fruit of any kind is an *open subsoil* that will allow perfect drainage; second, a *deep top soil* of a character suited to the kind of fruit grown. The character of soil best suited to each kind of fruit will be treated later on. Stones and boulders are not injurious, but on the contrary, rather a benefit; the loose stones on top serve as a mulch and retain moisture, and the roots find their way around and under the boulders and there secure a good supply of moisture. For this reason many stony hillsides and flat mountain tops which cannot be utilized in any other way furnish excellent sites for orchards.

*Exposure.*—Opinions differ somewhat on this point, but a majority seem to favor a northern exposure, as the idea prevails that the buds are retarded somewhat, and are less liable to be injured by late frosts. Also that a southwestern exposure is least desirable.

*Altitude.*—Is more important than exposure. The trees should

be planted above the level of the lake of cold air that settles in the valleys at night; the warmer and more sheltered the valley the more important is this point, as these places are most subject to late frosts. No fixed height can be given at which it will be safe to plant; it will depend upon the width of the valley and the abruptness of the slope at either side. Each planter must decide for himself what will be a safe altitude.

Conditions differ, however, along the shores of lakes and broad rivers; here the water tempers the air and prevents injury by late frosts. We find the influence of Lake Erie extends two or three miles inland, while along the Susquehanna, peaches growing close to the bank frequently escape injury while the entire crop has been destroyed by frost in an orchard a mile back in the country.

While good fruit can be grown on these bottom lands which border on rivers and lakes, provided they are well drained either naturally or artificially, yet as a rule the fruit will not be as high colored, as fine flavored, nor have as good keeping qualities as that grown on higher ground; this is especially true of the apple.

*Rainfall.*—The distribution of rainfall throughout the entire season is important. Trees require a large amount of moisture during the growing season to properly mature their crop of fruit. As the summer showers usually follow mountain ranges, the foothills of the mountains and high narrow valleys are generally better watered than the plains.

*Shipping Facilities.*—After we have grown our fruit we must market it, and here comes in an important item of expense. We should take into consideration, not only the distance of the orchard from the railroad station, but if possible get within reach of competing lines of railroad, and thus secure the lowest possible freight rates.

With these points firmly fixed in our minds we are ready to intelligently consider what to plant.

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## APPLES.

### I. SOIL.

Apple trees will thrive and do well in almost any well drained, well prepared soil. A deep, strong, sandy or gravelly loam with open subsoil is generally recommended, but the best results have been obtained in this State on soils formed by the breaking down of shale. Good reports come from gray, red and yellow shale lands. Such a



soil is rich in iron, calcium, magnesia, phosphoric acid and potash, with but little nitrogen.

Whatever the other characteristics may be, it should be *deep* to allow extension of the roots; *well drained*, either naturally or artificially, to prevent injury from stagnant water below the surface, and *firm*, and not peaty or spongy, to preclude injury or destruction from frosts. Just here I quote from a letter received from Mr. Edward T. Ingram, of West Chester, a fruit grower of large experience:

"In considering the varieties of fruits to plant, the character of the soil and elevation are the most important points. From my observation I would formulate, on general principles, as follows:

"1st. On heavy soil, retentive of nitrogen, the fruit will be larger, and have more water in its composition.

"2d. That on soils not retentive of nitrogen, but rich in potash, the fruit will be smaller and of higher flavor, with more sugar in composition.

"3d. That varieties of fruit of high flavor are of better quality when fully grown; that large, fine specimens are delicious, while smaller ones are acid and unpleasant.

4th. That varieties of low flavor, when overgrown, are insipid and poor in flavor, but are much better when smaller and with a higher development of sugar.

"5th. That varieties that bloom early or require a longer season for development, will frequently fail at comparatively low altitude and be successful at high ones."

## II. VARIETIES.

It is a mistake to plant many varieties. The most successful practice is to select the best of its kind for each season, and have only one, or at most, two varieties of any kind of fruit ripening at the same time.

The first question to consider in this connection is, "Where do we expect to sell our fruit?" We have the world for our market, and excellent facilities for reaching any part of it. The display of fruit at the Paris Exposition has started inquiry in regions heretofore untried, and the limits of the foreign market are being indefinitely extended. So also is the demand for home consumption in the various mining and manufacturing towns all over our own and immediately adjoining States.

The foreign market demands winter apples that keep well, ship well, and stand up for a reasonable time after being taken from cold storage, and seem to prefer red color.

The home market will use a good baking apple at any season of the year. Care should be taken, however, not to plant too many

early ones. Housekeepers begin using them early, and the demand steadily and gradually increases until after the holidays, when it is practically unlimited.

Mr. Geo. T. Powell, in an address delivered recently before the New York State Fruit Growers Association said:

"We need to study the demands of the different markets. London will pay the highest price for red apples of medium size; Liverpool will pay high prices for large apples like King, Twenty Ounce, Hubbardston and Spy. The same is true of our home markets, and to realize the highest value, the shipper must understand what the different markets most demand. Boston will pay the highest price for Fameuse, Gravenstein and McIntosh; New York for King, Jonathan and Rhode Island Greening; Chicago for Hubbardston, and Giffiflower will bring more money than any other variety in the southern cities."

In this connection it may be well to consider the comparative prices obtained in England and Germany during a stated period as a guide to planters of new orchards. We find that during a period of five months the average of price ranged from highest to lowest in the following order:

#### ENGLAND.

Jonathan,  
York Imperial,  
Tompkins King,  
Northern Spy.  
Spitzenburg,  
Baldwin,  
Ben Davis,  
Winesap.

#### GERMANY.

Jonathan,  
Northern Spy.  
York Imperial,  
Tompkins King,  
Baldwin,  
Spitzenburg,  
Winesap,  
Ben Davis.

While it may be best for those having good fruit lands, within easy reach of the main line of railroad, to plant for the foreign market, it will be found equally profitable in most of the southern, central and western counties, to cater to the demands of the home market, hence in this bulletin we will consider varieties suited to both.

In planting an apple orchard, we do not expect to reap our reward for eight or ten years. Hence in the selection of varieties we should ask ourselves the question, "What will the general public think of this apple after an intimate acquaintance of ten years? Will they be likely to ask for it, to insist on having it? or may they possibly tire of it and look for something better suited to their taste?" Those who are familiar with the markets of Pennsylvania know, that in those sections where Summer Rambo and Smokehouse have been grown for some years, about the first of August, housekeepers begin



inquiring for Summer Rambo, and will be satisfied with nothing else while Summer Rambo lasts, and later on they must have Smoke-house or nothing, and there is no use trying to force any thing else on them during the respective seasons of these two varieties.

Reasoning from this standpoint, How will Ben Davis stand ten years hence? Will people be asking for Ben Davis in a market supplied with Newtown Pippin, Baldwin and Northern Spy? We are told that it is in good demand to-day, but will it last when people have become thoroughly acquainted with it? Already buyers have come from St. Paul and Minneapolis to Adams and Franklin counties and bought up whole orchards of York Imperial at a time when their home markets were well stocked with western grown Ben Davis. I think it is a mistake to advocate the promiscuous planting of this variety, but would lay down this positive rule: Never plant Ben Davis where York Imperial will succeed, plant very sparingly of York Imperial in the higher altitudes where Baldwin, Northern Spy and King do well. There are some sections of Adams and Franklin counties where Ben Davis, and its near relative Gano, are grown as fine in form and color as anywhere in the world, and climatic conditions are such in these sections that Baldwin and Spy are fall apples; in such places Ben Davis and Gano are probably the best varieties to plant for profit. As we follow the same range of hills into York, Cumberland and part of Dauphin counties, York Imperial will be found profitable and should gradually replace Ben Davis. Following this same mountain range still farther to the northeast, into Schuylkill county, York Imperial should be gradually replaced by Baldwin and Grime's Golden, and after Schuylkill is passed it should be dropped out of the list altogether.

Up to this time the only apples that have been sent abroad from Pennsylvania, in any quantity, are Ben Davis, Gano and York Imperial. Several large plantations have recently been made along the South Mountain, in Adams county, with the expectation of selling the product in European markets, and in the next few years the number will no doubt be largely augmented.

We have a number of Pennsylvania apples that have been grown for years in their native counties and are much prized where well known because of the vigor of the tree, the regularity with which they bear, and their excellent cooking and keeping qualities.

We will here briefly discuss the merits of a few old, well-tried sorts, and some that seem to be worthy of more general distribution.

#### SUMMER APPLES (FOR LOCAL MARKET ONLY).

*Early Harvest* is the standard with which we compare all early sorts, and should be found in every collection. The tree is hardy,

a regular bearer, one of the earliest and best baking apples that we have.

*Benninger*.—A large, red-striped apple, grown in Lehigh and Montgomery counties, supposed to be a native of Lehigh. It is about as early as Early Harvest. Keeps better and lasts longer. Has been found more profitable than either early Harvest or Red Astrachan. It has been sold in the local markets for more than 40 years. Recommended by Geo. H. Rex & Son, Stetlersville, Lehigh Co.

*Red Astrachan*.—This apple although of second rate flavor, has been largely planted on account of its very handsome appearance, the vigor and productiveness of the tree and its excellent culinary qualities, and has been found one of the most profitable very early sorts.

*Yellow Transparent*, is probably one of the best early apples to plant for nearby market. The tree is an early and abundant bearer, and the fruit sells readily on account of its beautiful, clear, smooth appearance and good cooking quality. Its thin skin and light color make it a poor shipper, unless put up in small packages and very carefully handled.

*Keswick Codling* is an excellent late summer baking apple. It succeeds well in the Cumberland Valley. Tree is hardy and vigorous, a good bearer and the apple sells well. Valuable for home market.

#### FALL APPLES.

*Austin Sweet* is one of the very few sweet apples worthy of notice; it is a large, rich flavored, golden, September apple; used for apple-butter, for spicing and preserving; it is used extensively for butter with quinces. Recommended by J. B. Johnston, New Wilmington, Lawrence Co.

*Duchess of Oldenburg*, while a fall apple in the higher altitudes, is a summer apple in the Susquehanna Valley. The tree is remarkably hardy and vigorous, bears early and abundantly, the fruit is handsome, and while not of the best quality, is excellent for culinary purposes, being very tart, and is a good seller in any market.

*Kretchman* is a large, sour, dark red apple, good for cooking or eating in late fall. A good market variety. Recommended by G. H. Rex, Stetlersville, Lehigh county.

*Lehigh Greening*.—A large, greenish-yellow, fall apple, good for baking; tree is vigorous and hardy, a good bearer. Apple sells well in the markets of Lehigh and Montgomery counties, where it is grown to a considerable extent.

*Maiden's Blush*.—This beautiful fall apple has been successfully grown in nearly every county of the State and seems to be a general favorite for the home market; the tree is a thrifty, vigorous grower,

and bears regularly and abundantly. The apples sell well in any market on account of their attractive appearance and their good baking qualities.

*Summer Rambo* is one of the most profitable fall apples that can be grown for the home market in Pennsylvania. Its large size, attractive appearance and excellent quality, either eating or cooking, commend it to every housekeeper, and the man who has them for sale need have no other kind ripening at the same time, as there is nothing in its season that can compare with it. It succeeds well on either high or low land, if the latter is well drained.

*Smokehouse* follows immediately after Summer Rambo, and is the only fall apple that can take its place. The tree is a rather crooked, scrubby grower in the nursery, but when planted in the orchard and carefully pruned, it grows vigorously, and bears abundantly. It thrives and does well on rich, valley farms, on clay, shale, gravel and loam. In fact it seems to do well on any rich, well drained soil, and it sells at top prices in any market. As its season is about the same as King, there seems to be no reason why it should not be grown in the northern tier of counties for export. It is certainly worthy of trial.

*White Doctor*.—A native of Pennsylvania, is a very large, green, baking and eating apple, of excellent quality; ripens about the 1st of October. Good for local market.

*Tompkins King*.—While generally classed as a winter apple, it is a fall apple in most counties of Pennsylvania, but owing to its fine appearance and excellent quality, it sells well at any time. The tree grows vigorously and bears well for a few years, but usually is very short lived. It has been suggested by Prof. Bailey, that this variety should be top worked on some stronger, hardier stock, like Northern Spy, and a number of trees have been treated in this way during the past few years. If the experiment proves successful this will be a very profitable variety to grow either for home market or for export.

#### WINTER APPLES.

*Baldwin* stands at the head of the list in popularity. It has been reported as one of the five best varieties by every grower who answered my circular of inquiry. The objection to it in southern Pennsylvania is, that it ripens too soon, and is apt to drop before picking time. This premature dropping, however, is generally caused by leaf blight, which attacks the leaves, and they are unable to perform their functions during the latter part of the season. It has been found, if the trees are thoroughly sprayed three or four times during the season with Bordeaux mixture, that the leaves will



remain healthy, and the apples will remain on the tree until the middle of October, and will keep till mid-winter in an ordinary cellar. It should, however, be planted on moderately high, well-drained ground. When planted on low ground near the water level, even if well drained, the fruit lacks color and keeping qualities.

*Baer or Hiester*.—A medium sized, red striped apple, grown to some extent in Berks county. It is a heavy bearer and good keeper. A very pleasant eating apple and sells well in local markets.

*Belmont or Gate*.—A native of Lancaster county. Is a light yellow, early winter apple, of excellent quality; tree is vigorous and healthy and very productive. Apple sells well in the markets of Mercer county, where it has been grown to some extent.

*Dominie*.—A red striped winter apple of good size and excellent quality. The tree is vigorous and productive, and the apple is a good keeper. It has been grown for some years in York and Cumberland counties with profit, and it seems to have all the qualities needed for export.

*Ewalt or Bullock Pippin*.—A native of Bedford county; should be more generally planted for the local market. It is a handsome apple, of excellent quality, a good keeper, and the tree is a vigorous grower and a good bearer.

*Grime's Golden*, while a native of Virginia, succeeds well in many counties of Pennsylvania. A leading fruit grower of Blair county says of it. "Grime's Golden is par excellence the apple for Pennsylvania local market; the tree is a slow, compact and spreading grower, and it is a regular, heavy bearer; one of the best early winter varieties." In some places it has proved short lived, like King and Fallawater. It would probably be advisable to top work it on some harder sort. It does equally well on high or low land, but requires a sandy or gravelly soil; does not do well on clay or limestone.

*Greist's Fine Winter*.—A native of York county. Yellow striped, with light red, in shape and size resembling Ben Davis. Tree is a vigorous grower and regular bearer; fruit keeps all winter in an ordinary cellar; is crisp, juicy and of sprightly flavor; has been found quite profitable in Lancaster county, as it does well on a limestone soil; considered worthy of trial for export.

*Kraus's*.—A native of Berks county, where it is held in high esteem. The tree is a vigorous and handsome grower, and an abundant and regular bearer. It is a very good, red apple and keeps well. It has been grown to some extent in Perry county. It sells well in every market where it has been offered, and should be more generally cultivated and should be added to the list of Pennsylvania apples grown for export.

*Langford* and *Nero* are both long keepers and worthy of trial in

every county of the State. Up to this time they have only been grown in Lehigh county.

*Lawver* is a large red striped, sub-acid winter apple; it keeps well and is very productive. It has been found profitable wherever planted in Pennsylvania.

*No Name, Spice Seedling and Cumberland Seedling* are three local varieties introduced by Longsdorf Brothers. They have done very well in the Cumberland Valley and are considered worthy of trial elsewhere for local market.

*Nottingham*.—A native of Chester county. Is a large, red, early winter apple, good for eating or baking. Sells readily and is productive. Recommended by J. Hibbard Bartram, who has planted a large orchard of them in Chester county.

*Russian Catalet* is a large, red apple, grown in Fayette county. Excellent for baking as well as eating; will keep till June. Recommended by L. C. Harris, of Perryopolis.

*Rhode Island Greening*.—Cannot be recommended for planting in Pennsylvania, except in the northern tier of counties, as in all other parts of the State it ripens its fruit too soon, generally in September and October.

*Rambo* is a profitable apple for home market. It can be grown on any sandy and gravel soil with a good subsoil, at almost any elevation, provided the ground is well drained. To secure best results they must be well sprayed. They are not late keepers, and owing to their thin skin and soft flesh are not good shippers, but when marketed in 20 pound baskets, bring the top price.

*Ridge Pippin* is desirable on account of its keeping qualities, it will keep all winter in an ordinary cellar, and is productive. It is found in many orchards in Montgomery, Bucks and Berks counties, and is a fairly good apple in the spring.

*Strinetown Pippin* has never been generally disseminated, but has been grown by many farmers in southern and southeastern Pennsylvania, especially in York, Cumberland and Lebanon counties, and has been found profitable when grown on high, rich land. It is an annual bearer, is totally unfit for use in the fall, but when buried in a pit just as turnips are buried, comes out in March clear and crisp, and is one of the best baking apples of the season, far superior to Ben Davis, York Stripe, York Imperial or even Ridge Pippin, which is thought so much of in Chester county.

*Stark* is a large, red-striped, winter apple of good quality. It is grown to some extent in Franklin, York and Perry counties, and is esteemed for its good keeping qualities. It is productive and profitable, a good shipper; worthy of trial for export.

*Stayman's Winesap*.—A large, red winter apple. Has been fruited

lately in the Mt. Pocono region and gives promise of great value, on account of its fine appearance and its good keeping and shipping qualities.

*Winter Blush*.—Strongly resembles Maiden's Blush, but is much later. Its season being from December to February.

*York Imperial*.—Varies greatly both in keeping and eating qualities. When grown on rich, river bottom lands in Dauphin county, it is a very low grade apple and will not keep until the holidays. Under any circumstance it is not good to use in the fall, but when grown under proper conditions, on moderately high land, rich in mineral matter and rather deficient in nitrogen, and is kept in shallow bins in a cool cellar, or better yet, in a cave, it comes out in the spring a fairly good apple for any purpose. It will stand up longer and bear more rough handling than any of the finer sorts, and coming after all the strictly high class varieties are out of the market, it sells well. For this reason the growers of Adams, Franklin, York and Cumberland and some parts of Dauphin and Lebanon counties have found it very profitable. It is not a good cold storage sort, but scalds badly if kept too long. If placed in cold storage it should always be marketed early in January.

*Smith's Cider*.—A native of Bucks county. Is a mild, sub-acid, red apple. Considered one of the most profitable varieties in Chester, Berks and Bucks counties. It is excellent for baking, a good shipper and a long keeper. It, however, requires a strong soil, and not much elevation. When planted on poor mountain land it is apt to twig blight, and has a general unthrifty appearance.

*Red Cider* resembles Smith's Cider, but is a better keeper and has more color and is in all respects a better apple.

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## PEARS.

The market for pears is likely to be greatly enlarged during the next few years. They are in good demand in European markets, when they can be placed there in good condition. The U. S. Department of Agriculture is making careful experiments in the matter of packing and refrigeration, two very important points in ocean transportation. It is hoped that as a result of these experiments, conditions will be so changed that pears will become a common export. Bartlett and Anjou pears have already been shipped to Edinburgh with such cold storage as we have, and sold at a profit, while Duchess have arrived in good condition without cold storage. We need not be afraid of planting too many pears at this time; before the trees

come in bearing the foreign market will be ready for them and proper facilities for transportation will have been arranged. The Paris Exposition did much towards introducing American fruit to foreign nations, and our Government is doing what it can to make it possible for us to take advantage of the demand thus created. The Canadian Government is experimenting along the same line, and the Canadian growers are eager to take advantage of any improvement in conditions. If Pennsylvania wants a share of this trade we should begin to plant at once.

#### VARIETIES.

Out of the great number of pears that have been tried at various times in this State, there seems to be only five that have stood the test of time and can be recommended as profitable market sorts, namely, Bartlett, Seckel, Duchesse d'Angoulême, Lawrence and Kieffer. We need a better early sort than Clapp's Favorite for the home market, as it blights badly in many places and cannot be recommended for general planting. Catherine and Manning's Elizabeth are prolific and of fairly good quality, but too small; the same objection holds as to Tyson and Bloodgood. Here is a field for the experimenter.

*Bartlett* is the only pear that received a double star from every correspondent. It stands at the head of the list as a profitable market sort, and although some persons object to the flavor, it is the best seller in every market. The tree is less subject to blight than any other variety. It is a regular, heavy bearer and good shipper. It does well either as standard or dwarf. Pennsylvania Bartlett and Seckel pears have a place of their own in the home markets. They ripen a couple of weeks before those grown in New York, and so for a short time they have the market all to themselves, and if these two varieties are offered as soon as they mature they always bring a fair price and will yield more clear profit at that time than at any later period. They will do well on a clay soil too heavy for apples and can be grown on any deep well drained soil, on mountain or valley, and will yield regular profitable crops.

*Duchesse d'Angoulême* is one of the best market sorts, and is remarkably healthy in tree and foliage. It is usually grown as a dwarf but will succeed admirably as a standard. The fruit is large and handsome, has a thick skin, is a good keeper, a good shipper, sells well in all markets, and when properly ripened, is an excellent pear.

*Howell* is an excellent canning pear, very fine grained and white fleshed. A good shipper, if well grown and picked at exactly the right time, but it is subject to blight in most places. The fruit is also subject to scab, and in order to secure good fruit, the trees must be thoroughly sprayed several times during the season.

*Bosc*.—Is a luscious table pear of beautiful appearance, bears



early and regularly if planted on rather high ground in fairly fertile soil, with an open sub-soil, protected from piercing north winds, well cultivated and regularly sprayed to protect it from fungus and insect pests. It is a poor grower and, therefore, must be top-worked on some strong growing sort. It does admirably on the foothills of the Alleghenies, in Blair county, but on the rich bottom lands of the Susquehanna the pears are knotty and the trees subject to leaf blight.

*Lawrence* is classed as a winter pear, and when grown on the higher altitudes may be kept all winter in an ordinary cellar, the same as apples are kept. It is very sweet and one of the best desert pears. The tree is a strong, vigorous grower and an abundant bearer. It is a good shipper, and when well grown and properly ripened always commands the highest price.

*Flemish Beauty*, like the Bosc, succeeds best on the foothills and elevated small valleys. It is a beautiful pear, a good shipper, of excellent quality, but must be picked just before maturity. It does not succeed well in the Susquehanna Valley on account of leaf blight, which causes the foliage to fall off before the fruit is full grown, unless the trees are carefully sprayed several times during the season.

*Pitmarsden Dutchesse* has been tried in Blair county and has done well. The tree is a fairly good, upright grower and enormous bearer of large fruit, ripening somewhat earlier than Duchesse d'Angouleme, which it much resembles.

*Madam Seibold* is a seedling of some good pear and Chinese sand pear. The fruit resembles in color a golden russet apple when fully ripe. It has a bright, golden color, it keeps well and sells well in the markets of the western part of the State. It has only been grown to any extent in Blair county.

*Kieffer*.—The much advertised, much abused Kieffer also has its place. It is an excellent canning pear, and may be grown with profit in the neighborhood of a canning factory, but the general market is very easily overstocked with them, and unless there is a canning factory within easy reach, they should be very sparingly planted.

*Koonce* is a large pear, a regular bearer, quite prolific. Is grown to some extent in Westmoreland county and found to be a profitable market variety.

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## PEACHES.

While peaches can be grown in every county of the State, it is not advisable to plant commercial orchards in regions much subject to



severe winters or late spring frosts. In districts where the thermometer frequently falls lower than 15 degrees below zero the crop will prove very uncertain. It is best to select a climate not given to extremes of any sort, and one which has a considerable rainfall, fairly well distributed throughout the year; for this reason the foothills of mountain ranges and high, narrow valleys, are desirable for reasons that have been previously stated. Some fields on a farm may be much better for peaches than others; high lands are generally better than low lands; rolling land is better than flat; a water front on a lake or broad river is better than an inland location. In inland regions a hillside with a northern exposure is generally preferred. When planting on a hillside care must be taken to keep above the frost line.

*Soil.*—The peach does not seem to be particular as to soil, but will succeed on any well drained land with a good sub-soil; the preference in this State appears to be for a sandy loam, filled with broken stone, from which chestnut timber has been removed. In York and Cumberland counties, what are known as the iron stone soils have given the best results.

One very important point in the selection of location for a peach orchard has been overlooked by many Pennsylvania growers to their sorrow, namely, a *deep soil*. No matter how favorable are the other conditions, without a deep, well drained soil and a good sub-soil, no one may hope for a full measure of success, as the ripening crop needs a large amount of moisture and this cannot be obtained from a thin soil.

*Easy Access to Market* is an important point. The crop ripens rapidly and must be disposed of quickly, therefore it is essential that the orchard should be within easy reach of a railroad station, and if two competing lines of road can be reached an advantage in freight rates may be secured. This is more important with peaches than any other fruit crop. Pennsylvania is well supplied with good markets in its hundreds of mining and manufacturing towns, and most of her fertile valleys are intersected by railroads, so that good locations may be had in almost any part of the State within an hours drive of the station.

*Varieties.*—In the selection of varieties we must consider our market. Peaches must be sold direct from the tree, and can be held only for a very short time, hence to secure profitable prices we must have our peaches to ripen when our markets are not well supplied from other States. This necessitates the discarding of all varieties that ripen earlier than Elberta. The glut of southern peaches is over by the time Elberta is ripe, and then for about three weeks we have a comparatively clear field to operate in. Yellow fleshed

peaches are in better demand all through the season than white fleshed and usually command a higher price. The following are a few of the most popular varieties, with some criticisms, that have been made on them by correspondents:

Chair's Choice pronounced good in Franklin county.

Salway does not succeed well everywhere. It should be planted on a gravel soil with good sub-soil, should have considerable elevation, north or western exposure. It will not do on strong land containing a large amount of nitrogen, or on clay land.

A correspondent from Franklin county writes: "Bilyeus and Edgemont Beauty are the money makers."

Pride of Kennett, a medium late white peach, introduced by Rakestraw & Pyle, is a native of Chester county. It has exceptionally fine flavor and beautiful color, but must be severely thinned, as it has a tendency to overbear, and on low ground in wet seasons will crack and mildew. It is a splendid peach for high ground that is rich and deep.

Cumberland county claims two seedlings of merit, known as Seedling White and Seedling Yellow. They can only be found in the local nurseries.

Fox Seedling, Ohio Beauty and Reeve's Favorite are highly recommended for Cumberland county.

Early Rivers, Hill's Chili, St. Johns, Lewis and Kalamazoo are favorites in Erie county. Elberta has proven tender in Erie county.

In Mercer county, A. B. Greenlee of New Lebanon recommends a native peach that reproduces itself from the seed. It is yellow fleshed and of excellent quality. It is quite extensively grown in the neighborhood of New Lebanon.

Iron Mountain has been found to be very productive and profitable in Schuylkill county. Mr. W. H. Stout, of Pinegrove, has grown record breaking crops of this variety.

In the Susquehanna Valley, Crawford's Late, Elberta, Globe and Red Cheeked Melocoton are the favorite yellow, and Old Mixon, Stump and Fox Seedling the favorite white varieties.

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## GRAPES.

For many years the grape industry in Pennsylvania has been confined to what is known as the Lake Erie grape belt. A narrow strip along the shore of Lake Erie in this State, and extending some distance into the State of New York, being about forty miles long. The idea prevailed that the crop was surer and the quality of the grapes

better. This may have been true when such varieties as Iona, Diana, Catawba and Isabella were the leading market sorts; but since the introduction of Concord, Niagara, Moore's Early and Moore's Diamond, it has been found that just as good grapes can be grown in the Susquehanna Valley and along the foothills of the Alleghenies and Blue Ridge as can be grown anywhere. At the same time, insect pests and fungus diseases are becoming very troublesome in the Erie grape belt and growers there find that they are obliged to resort to the same methods for protection that have been found necessary in other places. So it would seem that this industry may now be extended to many other parts of the State, with equal profit.

*Varieties.*—The number of varieties of grapes found in our markets has been much reduced within the past few years. The leading varieties in all commercial vineyards are: Concord, Niagara, Moore's Early, Delaware and Moore's Diamond.

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## PLUMS.

The general market is easily overstocked with plums. No one should make a large plantation of this fruit unless he has easy access to a canning factory. A reasonable amount can be sold in the city markets at profitable prices, but the canning and preserving factories must be depended on to take the bulk of the crop. The industry is in its infancy in Pennsylvania. A few large orchards of Japan plums have been planted, but it is too soon to state results. Some of our commission men think the Japan plums will grow in favor with the people. Others say their market does not want them. This is notably the case with Pittsburg.

What is known as the York State Prune has been grown with profit in Lackawanna county for the local markets.

*Yellow Gage*, a native of Westmoreland county, is a medium sized yellow freestone of excellent flavor. A good and regular bearer; is propagated by sprouts from the roots; it sells better in the local markets than any other. Recommended by Wm. F. Barclay, of Mt. Pleasant Mills, Pa.

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## CHERRIES.

The sweet cherries have proven a very uncertain crop. It is easy to grow trees; they thrive on soils that are too thin and dry for any other fruit and seem to do better without cultivation than with it.

But favorable weather just when the fruit is maturing is absolutely necessary. A couple days of rain when the fruit is ready to pick, followed by hot sun, may cause the fruit to rot and render the whole crop unmarketable. Robins and catbirds are very fond of them, and destroy large quantities before they are ripe. We would, therefore, advise against the extensive planting of sweet cherries in Pennsylvania, as we usually have thunder storms in June followed by hot sunshine, and our farms should be well stocked with robins and catbirds. It is different with sour cherries. They are not so much affected by rain, especially the later kinds, and the birds do not molest them. Land that is too thin and dry to grow other fruit, or even to grow good farm crops may be profitably utilized by planting to sour cherries, and the general market has never been overstocked with them.

*Book Cherry*, a local Lancaster county variety, is dark red, ripens about the middle of June, it is medium to large, of fine flavor, a heavy, regular bearer, good shipper, hangs long on the tree before it declines; a very profitable market sort. Recommended by John Weitzel, of Bethesda, Lancaster county.

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## CLIMATE.

"The climate of Pennsylvania is remarkable for the great change it exhibits between the summer heat of the central and southern portion, and the extreme cold of the uplands of the northern counties. The summer heats are more than tropical both on the Ohio river in the southwest, and the Susquehanna and Delaware in the southeast. While on the highlands of the northeastern counties and in Elk, McKean and other counties of that elevated plateau in which the Allegheny river takes its rise, the winters are sometimes of almost arctic severity. The difference in elevation is the chief cause of the low temperature on the northern plateaus; their average being about 1,500 feet above sea level, in some cases, large tracts reach nearly 2,000 feet, still being generally level enough for cultivation. The Susquehanna Valley cuts deeply through the whole mass, and along the main stem and principal branches it affords a mild climate and prolific soil, admirably adapted to the production of fruit. Tornadoes and hurricanes, such as are known on the Atlantic Coast, from the Gulf of Mexico to New England, are never experienced within the limits of the State in any marked degree of severity.

"Altogether Pennsylvania has a climate highly favored in many



respects, usually dry, clear, elastic and invigorating. Just what is needed to produce fruit perfect in form, with high color and exquisite flavor."

We have divided the State into seven sections or regions, designated on the map and the accompanying tables by the numerals 1, 2, 3, 4, 5, 6, 7, and in the list of fruits have marked each variety as it has been reported from each section; if fairly successful, with a single star, if especially recommended with a double star, in the column bearing the number of that section.

While our classification may not fit every farm in each section, we believe that this, together with the discussion already had on the several leading varieties of fruit, will be near enough for all practical purposes, and is probably as nearly accurate as we can get with our present limited experience in commercial fruit culture.

No. 1. The Southern Region.—The great Cumberland Valley lying between the Blue or North Mountain, and the irregular chain of the South Mountain, taking in the south slope of the North Mountain, and all sides of the York Hills and the South Mountain as they extend in a southwesterly direction through the counties of Cumberland, York, Adams and Franklin to the Maryland line.

No. 2. Southwestern Region.—Following the Susquehanna River from Harrisburg to the Maryland line. The Schuylkill river from Allentown to its mouth. The Delaware River from Easton to the Delaware line. Including the counties of Delaware, Chester, Montgomery, Bucks, Berks, Northampton, southern half of Lehigh, Lebanon, Lancaster and the southern half of Dauphin.

No. 3. Northeastern Region.—The distinguishing feature of which is an elevated mountain plateau 1,200 to 1,600 feet above sea level, extending from Wayne and Pike counties southward into the counties of Luzerne and Schuylkill. This plateau in its broadest part bears the name of Pocono, and seems to be well adapted to the production of winter apples and pears of high quality. It comprises the eastern half of Bradford county, all of Susquehanna, Wayne, Pike, Luzerne, Monroe, Columbia, Montour, Northumberland, Carbon, Schuylkill and upper Dauphin.

No. 4. Northern Region.—Embracing the counties of Warren, McKean, Potter, Tioga, part of Bradford, Wyoming, Sullivan, Lycoming, Clinton, Cameron, Elk and Forest. This region has not yet been developed along the line of fruit production, but seems to possess all the requirements for the growth of apples of high flavor and good keeping and shipping qualities. In the opinion of the writer no better place can be found to grow winter apples than the rocky foothills of the mountains in this region.

No. 5. The Middle Region.—Traversed throughout from N. E. to

S. W. by long, steep, rocky mountain ranges, which run in a general way parallel to the main ridge of the Alleghenies. The mountains are not high, the valleys as a rule are narrow, and get narrower as they leave the Susquehanna river. Peaches of the finest quality can be grown along the foothills of these mountains, and the failures that have been reported can nearly all be traced to the selection of hill tops having a thin, shaly soil, that could not furnish sufficient moisture for the ripening crop. Wherever peaches have been planted in deep soil, above the fog line, which is also the killing frost line, they have proved most profitable. In this we have the counties of Union, Centre, Snyder, Blair, Huntingdon, Mifflin, Juniata, Perry, Bedford and Fulton.

No. 6. Western Region.—All that portion west of the Alleghenies drained by the tributaries of the Ohio, comprising the counties of Mercer, Venango, Lawrence, Butler, Clarion, Jefferson, Beaver, Armstrong, Indiana, Allegheny, Westmoreland, Cambria, Washington, Fayette, Greene and Somerset. This is naturally a good fruit district, but wherever coke ovens have been put in operation the fumes have been carried in the air for a considerable distance, and caused more or less discoloration of the fruit. For this reason we would not advise the planting of a large commercial orchard on land underlaid with a considerable body of bituminous coal.

No. 7. The Lake Shore Region.—Comprising Erie and the greater part of Crawford county. A singularly fine and temperate climate characterizes the shore of Lake Erie and completely controls a belt some fifteen or 20 miles in width, known as the grape belt, while further inland, even 50 miles from the lake, this influence is sensibly felt.

## APPLES.

One Star (*) Fairly Successful. Two Stars (**) Highly Recommended.	1.	2.	3.	4.	5.	6.	7.
Austin Sweet, .....						**	
Baldwin, .....	*	*	*	*	*	*	*
Ben Davis, .....	*	*	*	*	*	*	
Benjamin Rambo, .....		*					
Beer or Hiester, .....		*					
Early Harvest, .....	*	*	*	*	*	*	*
Escopus Spitzenburg, .....		*	*	*	*	*	*
Ewalt, .....		*		*			
Fallwater, .....		*			*	*	
Fall Pippin, .....	*	*	*	*	*	*	
Golden Russet, .....	*	*	*	*	*	*	*
Gillflower, .....	*	*	*	*	*	*	*
Gravenstine, .....	*	*	*	*	*	*	*
Grime's Golden, .....	*	*	*	*	*	*	*
Gano, .....	*	*	*	*	*	*	*
Krauser, .....	*	*	*	*	*	*	*
Kircher's Kitchen, .....	*	*	*	*	*	*	*
Kretchman, .....	*	*	*	*	*	*	*
Keswick Codling, .....	*	*	*	*	*	*	*
Jonathan, .....	*	*	*	*	*	*	*
Lehigh Greening, .....	*	*	*	*	*	*	*
Lanbach, .....	*	*	*	*	*	*	*
Langford's Seedling, .....	*	*	*	*	*	*	*
Maiden's Blush, .....	*	*	*	*	*	*	*
Mother, .....	*	*	*	*	*	*	*
No Name Seedling, .....	*	*	*	*	*	*	*
Northern Spy, .....	*	*	*	*	*	*	*
Primate, .....	*	*	*	*	*	*	*
Rambo, .....	*	*	*	*	*	*	*
Red Astrachan, .....	*	*	*	*	*	*	*
Ridge Pippin, .....	*	*	*	*	*	*	*
Rhode Island Greening, .....	*	*	*	*	*	*	*
Rome Beauty, .....	*	*	*	*	*	*	*
Roxbury Russet, .....	*	*	*	*	*	*	*
Smokehouse, .....	*	*	*	*	*	*	*
Smith's Cider, .....	*	*	*	*	*	*	*
Stayman's Winesap, .....	*	*	*	*	*	*	*
Stark, .....	*	*	*	*	*	*	*
Sutton's Beauty, .....	*	*	*	*	*	*	*
Spice Seedling, .....	*	*	*	*	*	*	*
Tolman's Sweet, .....	*	*	*	*	*	*	*
Tompkin's King, .....	*	*	*	*	*	*	*
Twenty Ounce, .....	*	*	*	*	*	*	*
Wagner, .....	*	*	*	*	*	*	*
White Doctor, .....	*	*	*	*	*	*	*
Winesap, .....	*	*	*	*	*	*	*
Yellow Belleflower, .....	*	*	*	*	*	*	*
Yellow Transparent, .....	*	*	*	*	*	*	*
York Imperial, .....	*	*	*	*	*	*	*
York Stripe, .....	*	*	*	*	*	*	*

## PEARS.

One Star (*) Fairly Successful. Two Stars (**) Highly Recommended.	1.	2.	3.	4.	5.	6.	7.
Angouleme, Duchesse d', .....	*	*	*	*	*	*	*
Anjou, .....	*	*	*	*	*	*	*
Admiral Farragut, .....	*	*	*	*	*	*	*
Bartlett, .....	*	*	*	*	*	*	*
Clairegeau, .....	*	*	*	*	*	*	*
Clapp's Favorite, .....	*	*	*	*	*	*	*
Flemish Beauty, .....	*	*	*	*	*	*	*
Howell, .....	*	*	*	*	*	*	*
Kleffer, .....	*	*	*	*	*	*	*
Lawrence, .....	*	*	*	*	*	*	*
Louise Bonne d' Jersey, .....	*	*	*	*	*	*	*
Seckel, .....	*	*	*	*	*	*	*
Sheldon, .....	*	*	*	*	*	*	*
Tyson, .....	*	*	*	*	*	*	*
Winter Nellis, .....	*	*	*	*	*	*	*
Washington, .....	*	*	*	*	*	*	*
Koonce, .....	*	*	*	*	*	*	*

## PEACHES.

One Star (*) Fairly Successful. Two Stars (**) Highly Recommended.	1.	2.	3.	4.	5.	6.	7.
Alexander, .....						**	
Beer's Smock, .....	**	*			**	**	**
Chair's Choice, .....	*	**		*		*	
Champion, .....			**	*		**	**
Crosby, .....	*	**	*	*	*	**	**
Early Crawford, .....	**	**	**	**	*	**	*
Elberta, .....	**	**	**	**	**	**	*
Early Rivers, .....							**
Foster, .....		*	**	*		*	
Ford's Late, .....		*			*		
Fox Seedling, .....	**	**	*		*		
Globe, .....	*	**	*	*	**	*	
Gibson, .....	**						
Iron Mountain, .....			**				
Late Crawford, .....	**	**	**	*	**	**	*
Lewis Kalamazoo, .....							*
Loveit's Late, .....		*					*
McAllister, .....	**						
Mountain Rose, .....	**	**	*	*		**	*
Old Mixon Free, .....	**	**	**	**	**	**	
Reeve's Favorite, .....	**	**		*	*	*	
Smock, .....	*	*		*	*	*	
Stephen's Rareripe, .....							
Stump, .....			**	*	**		*
Salway, .....	**			*		*	
Susquehanna, .....	*	**		*	**	*	
Seedling, White (Lonsdorf), .....	**						
Seedling, Yellow (Longsdorf), .....	**						
Schaffer, .....		*					
St. John, .....							*
Wheatland, .....		*					*
Ward's Late, .....			*		*		
Wonderful, .....					*	*	
Yocob, .....		*					

## GRAPES.

One Star (*) Fairly Successful. Two Stars (**) Highly Recommended.	1.	2.	3.	4.	5.	6.	7.
Brighton, .....	**	**	*	**	*	*	
Campbell's Early, .....			*	**			
Concord, .....	**	**	**	**	**	**	**
Delaware, .....	*	**	**	**	*	*	**
Diamond Moore's, .....	*	**	*	**	**	*	*
Eaton, .....				**			
Herbert, .....	**						
Lindley, .....	**			*	*		*
Moore's Early, .....	*	**	*		**	**	**
Niagara, .....	**	**	*	**	**	**	**
Salem, .....	*		**			*	*
Vergannes, .....		**					
Winchell (Green Mountain), .....	*		**			*	
Worden, .....	*	**	**		**		**



## CHERRY.

One Star (*) Fairly Successful. Two Stars (**) Highly Recommended.	1.	2.	3.	4.	5.	6.	7.
Black Eagle, .....	**	*	.....	*	.....	.....	.....
Book, .....	.....	**	.....	.....	.....	.....	.....
Conestoga, .....	.....	**	.....	.....	.....	.....	.....
Cumberland Triumph, .....	**	*	.....	.....	.....	.....	.....
Coe's Transparent, .....	*	.....	.....	*	.....	.....	.....
Carnation, .....	.....	.....	.....	.....	.....	.....	.....
Early Purple Guigne, .....	.....	**	.....	*	.....	.....	.....
Elton, .....	*	*	.....	.....	.....	.....	.....
Florence (Mt. Pocono), .....	.....	.....	**	.....	.....	.....	.....
Great Baggareau, .....	.....	.....	.....	.....	.....	**	.....
Ida, .....	**	.....	*	.....	.....	.....	.....
Louis Philip, .....	.....	.....	**	.....	.....	.....	.....
Napoleon, .....	**	**	**	*	*	.....	.....
Ox Heart, .....	.....	.....	.....	**	**	.....	.....
Red Jacket, .....	.....	*	.....	.....	.....	*	.....
Spanish Yellow, .....	*	.....	*	**	**	.....	**
Tartarian, Black, .....	**	**	**	**	**	**	.....
Windsor, .....	*	*	*	*	.....	*	**
Wood, Governor, .....	**	*	**	**	**	*	*
Dukes and Morellos.							
Late Kentish, .....	.....	**	*	.....	.....	.....	.....
Reine Hortense, .....	*	*	.....	.....	.....	.....	.....
May Duke, .....	.....	**	*	*	**	**	*
Montmorency, Large, .....	.....	**	*	**	*	*	**
Montmorency, Ordinary, .....	**	*	*	**	**	**	**
Morelo, English, .....	**	*	*	.....	**	**	**
Richmond, .....	**	**	**	**	**	**	**
Dyehouse, .....	.....	.....	.....	**	.....	.....	.....

## PLUM.

One Star (*) Fairly Successful. Two Stars (**) Highly Recommended.	1.	2.	3.	4.	5.	6.	7.
Bovay (Bovay Green Gage), .....	**	**	.....	*	**	**	*
Bradshaw, .....	**	*	.....	*	.....	*	**
Damson, .....	.....	.....	.....	.....	*	**	.....
Duane Purple, .....	*	.....	.....	.....	.....	**	.....
Englebert, .....	*	**	*	*	**	.....	.....
Golden Drop, Coe's, .....	**	**	*	*	*	**	**
German Prune, .....	**	*	*	*	*	*	*
Imperial Gage, .....	**	*	.....	*	*	*	*
Jefferson, .....	**	.....	.....	.....	*	.....	.....
Lombard, .....	*	**	*	*	*	*	**
Prince Yellow, .....	.....	.....	**	*	*	*	.....
Shipper's Pride, .....	**	.....	.....	.....	**	.....	.....
Simpson, .....	.....	.....	.....	.....	.....	.....	.....
Shropshire, .....	*	*	.....	*	.....	**	**
Washington, .....	*	*	*	.....	**	.....	**
Wild Goose, .....	.....	**	**	*	**	*	.....
York State Prune, .....	.....	.....	.....	**	.....	.....	.....
Yellow Gage (Westmoreland Co.), .....	.....	.....	.....	.....	.....	*	.....
Japan, .							
Abundance, .....	**	**	**	*	*	**	**
Botan, .....	*	*	**	*	.....	.....	**
Burbank, .....	*	**	**	*	*	*	**
Red June, .....	**	.....	**	*	.....	.....	**
Satsuma, .....	*	*	**	*	.....	*	*
Wickson, .....	**	.....	**	.....	.....	.....	.....
Willard, .....	.....	*	.....	*	.....	*	**

## THE STATE BY COUNTIES.

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### ADAMS COUNTY.

Considerable attention has been paid to commercial fruit culture in Adams county. The land is very much broken by irregular mountain ranges and spurs, which render ordinary farming difficult, but which furnish many excellent sites for orchards. The soil being strongly impregnated with iron, produces fruit of high color and attractive appearance. Here the Ben Davis, York Imperial and Gano apples are grown to perfection and with much profit, and all the mid-season and late peaches do well. Many new orchards of both apples and peaches are being planted this season, and altogether, the fruit industry seems to be in a more flourishing condition than in any other county of the State.

### ALLEGHENY COUNTY.

With the exception of winter apples, very little fruit has been grown for market, but with proper care in selecting location for orchards, just as good fruit can be grown here as elsewhere. Peaches and plums are uncertain, owing to late frosts, and severe winters; where they have been planted at the proper altitude, however, they have succeeded very well. There is such an excellent home market for fruit of all kinds, that a special effort should be made to produce it.

### ARMSTRONG COUNTY.

The climate is not subject to extremes of temperature, as the north winds coming from the lakes are somewhat modified; the high altitudes afford good locations for fruit growing. The soil on the elevations is generally of a sandy character, and is usually underlaid with a deep clay. Good home markets are afforded by the many new industries that are springing up. Little attention has been paid to commercial orcharding, but fruit of all kind is grown for home consumption.

### BEAVER COUNTY.

All kinds of fruit do well if properly cared for, but up to this time it has not been grown as a special crop in a commercial way. Cher-

ries and plums do well when planted on soil suited to them. More attention is paid to apples than to other fruit. Benoni and Keswick Codling have been quite profitable. They are both medium early sorts and sell well because they are good for cooking purposes. Red Stark has also been mentioned as a very profitable sort.

#### BEDFORD COUNTY.

Owing to the mild climate Baldwin apples drop badly. York Imperial and Ben Davis do fairly well. A red winter apple of good quality is needed. Growers are trying Jonathan, Salome, Stark and Willow Twig. The quality of the latter is so poor that it should be dropped. Cooper's Market seems to promise well. Peaches and pears should be grown with profit.

#### BERKS COUNTY.

Berks county has had a very active agricultural society for many years, and the annual exhibitions of fruit have stimulated this industry very much. Considerable attention has been paid to the development and propagation of local seedling apples, a number of which have proven quite profitable. Benjamin's Rambo is large, slightly acid, a good baker, one of the best sellers in the local market. Is good from the middle of September until spring and keeps in an ordinary cellar.

Miller, Baer or Hiester, Belmont or Gate, and Yocob, are good keepers and do well. Krauser is one of the most profitable here as elsewhere.

Prince Engelbert plum has been successfully grown in a number of places.

#### BLAIR COUNTY.

The elevated regions are good for fruit, especially apples and pears. Peaches can be grown if planted above the fog line. Cherries and grapes also do well, but very little attention has been paid to fruit, only two or three commercial orchards are to be found in the county.

#### BRADFORD COUNTY.

Bradford is a dairy county, but some attention has been paid to fruit of late years. Baldwin apple leads as a profitable market sort.

Northern Spy, R. I. Greening, Duchesse of Oldenberg and Yellow Transparent do well. Wagner sells well. The tree is an early and prolific bearer, but is apt to be short lived. Peaches and plums can be grown above the fog line. In the Susquehanna Valley we find Concord, Worden, Moore's Early, Brighton, Delaware and Niagara

grapes flourishing. With proper attention to this industry, Bradford can make as good a reputation for fruit as she has already made for her dairy products.

#### BUCKS COUNTY.

The red shale lands of Bucks county produce good fruit, especially apples. Ridge pippin seems to be the favorite, as it is a good keeper and a good seller. Smith's Cider is quite extensively grown and also Red Cider, which closely resembles Smith's, but has more color, keeps better and seems to be a better apple.

#### BUTLER COUNTY.

Very little attention has been paid to fruit for market, but the red shale land which is found in many parts of the county always grows good fruit when the soil is deep enough for trees.

#### CAMBRIA COUNTY.

Is well adapted to fruit culture, although little attention has been paid to it. The soil and climate are quite uniform. Plums, pears, peaches and grapes have not been grown to any great extent, but are being planted and promise well.

#### CAMERON COUNTY.

Is as yet undeveloped, but when planted for home use, apples, peaches, pears and plums have done well.

#### CAREON COUNTY.

Is undeveloped, but newly planted orchards that are properly cared for are doing well.

#### CENTRE COUNTY.

Apples do well, and as there is a good nearby market in the various mining towns, a full line can be grown from the earliest to latest. All sorts of plums do well. Peaches are uncertain on account of late frosts. Cherries do not succeed in the lowest part of the valleys, but on the hills, and along the base of the Bald Eagle and Allegheny mountains they do well and are profitable.

#### CHESTER COUNTY.

Here we find a great variety of soil, and constantly varying local conditions. The surface is very much broken. A certain variety of fruit will sometimes do well on one side of a low ridge, while on the other side it fails entirely. Although several of the oldest and most successful nurseries in the United States are located in the county, very little fruit is grown for market. A number of correspondents

express the idea that Chester county is not adapted to fruit growing. In the opinion of the writer, however, this is not the case. Much of the soil is strongly micaceous, furnishing an inexhaustable supply of potash. If such a soil is thoroughly drained and has the proper altitude it should produce good fruit. We have no record of success with plums. Apples succeed when planted in the right place. Smith's Cider for winter and Doctor for earlier in the season, seem to lead. Several local varieties have been quite profitable and are recommended for trial elsewhere. Mother is a very pleasant, sub-acid, red, fall apple, one of the best for use during September and October.

Nottingham is a very good early winter sort, fair size, red color, rather tart, a good baker and good for eating. Tree vigorous, an early and prolific bearer. Recommended by J. Hibbard Bartram who has planted a large orchard of them. Above All and Laurel Pippin are two excellent winter sorts; both are high flavored, of fair size and good keepers. Recommended as worthy of trial by Franklin G. Brooke, of Pottstown.

#### CLARION COUNTY.

Little attention is paid to fruit growing, except for home use. All kinds of apples do well. European plums rot; Japan plums promise well. North and northeast exposures are preferred for fruit, as buds are apt to be killed by late frosts.

#### CLEARFIELD COUNTY.

Fruit industry is undeveloped. Apples, peaches, pears and plums promise well where they have been planted and are being cared for.

#### CLINTON COUNTY.

Apples are the principal fruit grown. Along the foothills of the mountains some fine crops of Smokehouse, Baldwin, Northern Spy, Fallawater and Rambo are raised. A few flourishing peach orchards are reported in which Elberta, Crawford's Early, Mountain Rose, Crawford's Late, Stump and Old Mixon are found. The leading pears are Clapp's Favorite, Bartlett, Seckel and Anjou. Little attention has been paid to plums or cherries, and quinces are only grown for home use. It would seem from the reports received that many parts of the county are admirably adapted to certain kinds of fruit, but the farmers have never given the subject much thought.



## COLUMBIA COUNTY.

All parts of the county are not adapted to orchard culture. The fruit grown on the hills is not only finer than that grown in the valleys, but the crop is more certain. Peaches bear in the valley about two years out of five, while on hills 500 feet above the valley they bear four years out of five. The hills generally have a yellow gravel subsoil. The leading apples are Baldwin, Fallawater and Maiden's Blush; Smith's Cider and York Imperial are being planted, with good prospects of success. Laubach (local), a red sweet apple, is grown in different parts of the county for eating and for cider. It is a regular bearer, hangs well on the tree; keeps in an ordinary cellar all winter. Our correspondent reports that "Cider can be made very late from this variety fit to set before a temperance man or a preacher."

The peaches grown successfully in the hill orchards are Alexander, Early and Late Crawford, Elberta, Mt. Rose, Stephen's Rareripe, Stump and Smock. Pears: Duchesse, Bartlett, Clapp's, Sheldon and Kieffer. Plums, cherries and grapes are only grown for home use. The following varieties are giving satisfaction when planted in yards and gardens: Plums—German Prune, Lombard, Abundance, Satusma. Cherries—Spanish Yellow, Black Tartarian, Governor Wood, May Duke, Richmond. Grapes—Concord, Niagara, Brighton and Catawba.

## CRAWFORD COUNTY.

Little attention is paid to fruit outside of the portion known as the grape belt, lying nearest the lake. The farmers of the county are principally engaged in stock raising and dairying. For some years grapes have been the leading fruit grown. Of late years, however, the black rot has attacked the vineyards, and many large plantations have been dug out. Many growers are using Bordeaux mixture on their vines with the hope of saving them, and some with very good success. A few small orchards planted from 150 to 300 feet above the level of Lake Erie are producing profitable crops of apples, peaches, pears and plums. The varieties are: Apples—Baldwin, Golden Russet, Gilliflower, Maiden's Blush and Rhode Island Greening. Peaches—Late Crawford, Champion and Elberta. Pears—Bartlett, Clapp's Favorite, Kieffer. Cherries—Gov. Wood, Black Eagle, Ox Heart, Black Tartarian. The leading grapes here as elsewhere in the State are Concord, Niagara, Delaware and Moore's Early.

## CUMBERLAND COUNTY.

All kinds of fruit do well, especially along the slopes of the North Mountain and also the South Mountain or York Hills. European plums and cherries, both sweet and sour succeed very well. All of

the Japan plums have been tried in some parts of the county with very good success, being near market the early pears, such as Bloodgood, Catharine, Clapp's and Tyson are profitable. It has been found that the elevated ground along the foothills of the mountain, grow the best peaches, and the surest crops year after year. Varieties of fruit are selected with a view to their market value. As all kinds seem to succeed if properly cared for, small fruits of all kinds, but especially strawberries, are grown in large quantities and find ready sale in the Harrisburg, Carlisle, and Mechanicsburg markets. These are the three principal shipping points for the county. While the soil in the valley is principally limestone clay, on the hills we find a variety of sand, loam, shale and flint soil, all of which are well suited to fruit culture.

#### DAUPHIN COUNTY

Contains a great deal of good fruit land along the banks of the Susquehanna and on the elevated portions of all the valleys running back from the river. The climate is mild, however, and apples ripen early. Northern Spy ripens and must be sold in October. Baldwin is in prime condition just before the holidays, York Imperial, Grime's Golden and Strinetown Pippin have been successfully grown, and are profitable winter sorts, when planted on moderately high land, with deep open subsoil. Peaches, pears, grapes and cherries flourish if planted on proper locations and judiciously cared for. Small fruits have been grown in considerable quantities, but the industry has not been as profitable of late as formerly, and in consequence, the size of the plantations has been considerably reduced.

#### DELAWARE COUNTY.

Little attention has been paid to fruit culture for market. Although all kinds of fruit do well if properly cared for, as is shown by the character of fruit grown in the small orchards planted for home use. Conestoga Seedling Cherry and Cumberland Seedling have been found profitable. The Pyle apple originated and is grown here. It is described as follows by Mr. Joseph H. Paschell, of Ward, Delaware county: "The Pyle apple originated in Thornburg, Delaware Co., is very closely allied in characteristics to York Imperial, but is a decided improvement, being better colored and smoother shaped, bears better and sells better." Smokehouse seems to be the leading market apple. Bartlett the leading pear. Elberta the most profitable peach.

## ELK COUNTY.

Apples, pears and grapes do well. Only the hardiest kind of native peaches are grown. Japan plums succeed in favored localities. All sorts of cherries can be grown. Fruit is very uncertain on land less than 600 feet above the creek level, as late and early frosts kill the buds. Apples can be grown on land 100 feet above creek level, which is about 1,200 feet above sea level. All the late winter varieties should succeed in this elevated country.

## ERIE COUNTY.

All kinds of fruit succeed, and large quantities are grown and shipped out of the county. The grape belt has a world wide reputation for the quantity and quality of its product. Fine Baldwin, Spy and King apples are sent from here as can be found anywhere, but they ripen early and are generally marketed before the holidays. Canning factories take large quantities of cherries, plums, peaches, Kieffer pears (which are sold to the public in cans labeled Bartlett), quinces and currants. All varieties of plums and all varieties of cherries succeed. Grape growers are making their principal plantings of Concord, Niagara, Moore's Early and Delaware. It is a poor peach county generally, but in certain parts of the grape belt are found some fine orchards.

Corry is a poor section for fruit, being too far from the lake shore. At Platea many vineyards are being pulled out on account of grape rot. Growers are just beginning to spray.

## FAYETTE COUNTY.

While fruit cannot be profitably grown for market in many parts of Fayette county on account of the fumes from the coke ovens which injure its appearance, yet on elevated land away from the coke ovens, all kinds of fruit can be profitably grown. Most varieties of winter apples ripen in the fall, but York Imperial and Rome Beauty can be grown for late winter. Baldwin and Grime's Golden for early winter. Northern Spy ripens in the fall and drops from the tree before maturity. Peaches, plums and cherries must be planted on high ground to escape late frosts.

## FRANKLIN COUNTY.

Franklin county is destined in the near future to become the apple orchard of Pennsylvania. Large plantations have recently been made of Ben Davis and York Imperial, and others still larger are in



contemplation. Smokehouse, Grime's Golden, Smith's Cider and York Stripe have been grown with profit. Baldwin and Northern Spy ripen too early and drop their fruit before maturity. Mid-season and late peaches have given the best money returns. The proper elevation for both peaches and apples seems to be from 100 to 200 feet above the lowest point of the valley or 600 to 800 feet above sea level. The surface is very much broken, the soil on many of the lower ridges and elevated valleys is a mixture of limestone slate and ironstone, which is seldom found outside of this belt. Here the finest peaches are grown. On the higher altitudes the soil is principally disintegrated mountain rock, mixed with considerable copper ore, which is claimed to be an ideal soil for apples, and justly so, for apples grown on these ridges ripen much later than those in the valley and are unusually fine and high colored.

All kinds of orchard fruit and all kinds of small fruit do well. The demands of the market should determine the selection of varieties, as all seem to grow equally well.

#### FOREST COUNTY.

This county is undeveloped. The information obtainable on the subject was very meager. Apples, pears, plums and grapes can be grown, also peaches in favored locations, but up to this time have only been grown for home supply.

#### FULTON COUNTY.

All kinds of both orchard and small fruit can be grown in Fulton county. Owing to its southern location, special care must be taken to plant above the fog and frost line. It is especially adapted to apple culture. Orchards planted on the red gravel ridges have done very well. The county is as yet undeveloped, owing to the fact that it has no railroad within its borders. There is a road, however, in contemplation, and when this is built there is no reason why apple and peach culture should not be two of the most profitable industries in the county.

#### GREENE COUNTY.

The high lands of Greene county are well adapted to all kinds of fruit. Apples have been grown for some time successfully in small farm orchards and the peach orchards that have been planted in recent years on high ground have succeeded. Owing to its southern location the matter of altitude is very important. The level and low lands are apt to suffer severely from late frosts. Grapes, plums and cherries do well and small fruits ought to be profitable, as there are a number of good markets within easy reach by rail.

## HUNTINGDON COUNTY.

Very few large orchards of any kind are to be found in the county, although the farms are well supplied with a variety of fruit for home use. All kinds do well when planted on high ground that is deep and has a good sub-soil. An orchard of Simpson plum, on the farm of Mr. A. A. Simpson, near Mill Creek, planted in 1880 and 1885 has been yielding profitable crops since 1890; this is a new variety that originated in Mercer county, Ill. It is hardy, a good bearer and shipper, has free seed and is a good seller. Peaches do well on high ground. Small fruits can be grown, but the nearby markets are well supplied with wild blackberries and raspberries from the woods, which sell very cheap during the height of the season.

## INDIANA COUNTY.

No attention has been paid to fruit for commercial purposes. The soil of the valleys is principally heavy clay which is not adapted to the purpose. Apples, peaches, pears and grapes can be grown on the high ground. Japan plums that have been planted on high ground with a good sub-soil promise well. There are plenty of good locations for orchards in the county, but railroad facilities are very poor, except in a very small section, and while this condition continues there is little inducement to plant.

## JEFFERSON COUNTY.

Little attention was paid to the subject of fruit prior to 1890. Since that time a few orchards have been planted with good results. On the higher elevations all kinds of fruit do well, and there is a good home market in the different mining towns, both for orchard and small fruits at high prices. The most profitable apples are Baldwin, Spy, Rambo and Fallawater; in peaches, Elberta, Wonderful and Champion have been the money makers. European plums of all kind rot badly. Burbank and Abundance are being tried, but no bearing trees have been reported. With its high elevation, Jefferson county should produce the finest kind of winter apples.

## JUNIATA COUNTY.

The Tuscarora Valley along the foot of Shade Mountain is a fine section for fruit of all kinds. Apples and peaches pay best. Many profitable orchards have been grown and many miserable failures have been reported from what is known as the "Juniata Peach Belt." The principal cause of failure has been that the trees were planted on shallow, slaty hills, where they could not get sufficient moisture

during the summer months. Wherever peaches have been planted on a deep soil above the fog line they have paid well. Owing to the mild climate, apples ripen early and do not keep well, but to offset this they have good railroad facilities to market that take large quantities during the months of October and November. Smoke-house, Summer Rambo and Baldwin can be grown for fall and early winter. Grime's Golden, York Imperial and Rome Beauty for later. The mid-season and late peaches have been found most profitable. All kinds of small fruit can be grown, but the markets within easy reach are well supplied with wild berries. For this reason strawberries are the only small fruit grown to any extent in the county.

#### LACKAWANNA COUNTY.

Considerable attention has been paid to fruit, and many valuable varieties have been propagated, especially is this true of apples. The Bank apple (local), is sub-acid, medium sized, good for eating and cooking, an abundant bearer and ready seller. It ripens in the fall, and is considered the best of its season wherever grown. The Clark (local) is also much esteemed by all who know it. The level lands do not grow good fruit, but the hillsides and higher ground produce all kinds in perfection. The best apples are Baldwin, Spy, King and Duchesse of Oldenburg. Pears—Bartlett, Clapp's Favorite, Kieffer and Anjou. Peaches—Stump, Old Mixon, Mt. Rose, Crosby and Fitzgerald. Plums—All seem to do well. Small fruits do well. Strawberries are grown principally and hauled by wagon to nearby markets.

#### LANCASTER COUNTY.

The farmers of Lancaster county have been so much occupied with the production of tobacco and wheat that the fruit industry has been sadly neglected, but there are thousands of acres not adapted to either of these crops that might be planted to orchard with profit. The most popular apples are Baldwin, York Imperial, Grime's Golden, Smith's Cider, Greist's Winter and Krauser. Peaches—Elberta, Globe, Champion, Fox Seedling, Crawford's Late, Mt. Rose and Crosby.

Pears—Bartlett, Clapp's Favorite, Lawrence and Duchesse.

Plums—All kinds do well. Grapes, cherries and quinces are grown for home use in all parts of the county and grow well everywhere. Spraying is only practiced by a few men as plantations are generally too small to warrant the expense of an outfit.

## LAWRENCE COUNTY.

Little attention has been paid to fruit for market, but where planted on high ground with a good sub-soil and properly cared for it succeeds well. The most profitable apples are Baldwin, Ben Davis, Fallawater, Grime's Golden and Austin Sweet. Peaches—Crawford's Late, Old Mixon, Smock and Elberta. Plums—German Prune, Damson, Green Gage and Abundance. Cherries—Richmond, May Duke and Black Tartarian. Grapes—Concord, Delaware and Niagara.

## LEBANON COUNTY.

Most of this county is well adapted to fruit culture. The best land is on the north side of Cornwall Hill, extending westward to county line. Here we find gravel, sand and what is known as iron-stone land; the best for fruit in the State.

Best apples for Lebanon county are York Imperial, Baldwin, Strinetown Pippin, Dominie, Smokehouse and Yellow Transparent. Peaches—Elberta, Brandywine, Late Crawford, Globe, Mt. Rose, Stump, Old Mixon, Fox Seedling. Pears—Bartlett, Clarigeau, Lawrence and Kieffer. Plums—Wild Goose, Abundance, Burbank, German Prune, Prince Engelbert, Lombard. Cherries—Napoleon, Yellow Spanish, Tartarian, Gov. Wood, Hortense, Richmond, Montmorency. Grapes—Concord, Worden, Niagara, Clinton.

Small fruit culture is undergoing a change in this as in other counties. Small plantations are being started all over the county, near the manufacturing and mining towns, and the large growers are going out of business.

## LEHIGH COUNTY.

The mountains run east and west and contain a variety of soil. Some very poor, but some very good fruit land. Apples, pears, plums, peaches, cherries and small fruits are grown for local market, but none are shipped out of the county. All kinds of fruit do well on the high lands. The leading apples are Smith's Cider, Baldwin and Smokehouse of the older sorts. A number of local varieties are grown with profit, among which are Hundwerk and Herter, which originated in Heidelberg township. Both are winter varieties, long keepers, sub-acid, red streaked, fair sized, good bakers and good sellers. Recommended by L. B. Geiger, of Hoffman. Bear or Hiester originated in Berks county, a heavy bearer and late keeper. Lehigh greening, a large greenish-yellow fall apple, sub-acid, a heavy bearer and good seller. Large Yellow Pie is a large early summer apple of first quality, slightly sub-acid, a heavy bearer. These have been recommended by Henry F. Rupp, of Seips-



town and W. B. K. Johnston, of Allentown. The leading pears are Bartlett, Seckel, Anjou and Kieffer. Many old pear trees of the Calabash and "Seed Time" varieties are still found in good bearing condition, from 90 to 100 years old, but as they die out they are being replaced by better and more modern varieties. In peaches, we find Elberta, Champion, Early and Late Crawford, Wheatland, Smock and Mt. Rose.

Both European and Japan plums seem to do well where properly cared for. Several orchards of both apple and peach have been planted during the past year, and interest in fruit seems to be growing all over the county.

#### LUZERNE COUNTY.

Very little attention has been paid to fruit. There is a good local market for fruit of all kinds. On the higher altitudes high grade winter apples can be grown, and summer and fall apples for the local market do well in every portion of the county. Cherries and peaches succeed in many places. Plums have, as a rule, proved a failure. This, however, seems to be due to destruction by the curculio and ignorance of preventive measures, rather than to any climatic or soil conditions. The leading apples are Baldwin, Rhode Island Greening, Smith's Cider and Smokehouse. Pears—Bartlett, Clapp's Favorite, Seckel and Duchesse. Peaches—Crawford's Early, Elberta, Champion and Mt. Rose. Cherries—Gov. Wood, Tartarian, Napoleon, Montmorency and Richmond. Grapes—Worden, Concord, Moore's Early, Niagara and Delaware. The principal drawback to orchard culture in the mining region is depredation by small boys and idle characters always found loafing around public works.

#### LYCOMING COUNTY.

Apples can be grown successfully in most sections. Peaches and plums will succeed if planted on very high ground with a northern exposure. Otherwise they are apt to be killed by late frost. No attention has been paid to commercial fruit culture. Apples are recommended for the general market, other fruits for local market only. Small fruits produce enormously if properly cared for. The most popular apples are Baldwin, Smokehouse, Spy, R. I. Greening, Smith's Cider and Grime's Golden. Pears—Bartlett, Seckel and Kieffer. Peaches—Mt. Rose, Elberta, Early and Late Crawford, Smock and Salway.

#### McKEAN COUNTY.

No better place can be found for apples and pears. Some peaches are grown on the hills, but most of the trees are young and have not yet been proven.



Sour cherries do well. Blue Damson is the only plum grown to any extent, but other varieties will succeed if properly cared for. The leading apples are Baldwin, Spy, King, R. I. Greening, Grime's Golden. Pears—Bartlett, Anjou, Clapp's Favorite, Sheldon.

Little attention has been paid to small fruit culture, because wild berries are so plentiful on the mountains and so cheap in the markets. Growers are beginning to spray their apples, and to pay more attention to their orchards. The indications are that in a few years large quantities of apples will be raised in McKean county for export. Where the trees are properly cared for the flavor is delicious and the quality of the fruit unsurpassed.

#### MERCER COUNTY.

Apples are the principal fruit, but peaches and plums do fairly well, both sweet and sour cherries, pears and grapes are grown successfully for home use. The leading apples are Baldwin, Spy, Hubbardson and York Imperial. In addition to these, a number of varieties have been profitably grown. Stark, Mann and Winter Blush, for winter, Mammoth Pippin (ripe Sept. and Oct.), and Congress Pippin (ripe Nov. to Feb.), for fall, have been tried by Mr. A. B. Greenlee, of New Lebanon, and are pronounced by him along with the four first named, the best out of forty varieties growing on his farm. He also names the Crosby peach as the best and most profitable.

The best peach orchard is planted on a ridge from which chestnut, oak and hickory had been cut, at an elevation of about 1,200 feet above sea level, 100 feet above creek level.

#### MONROE COUNTY.

The best part of the Mt. Pocono region is in this county. All kinds of fruit do well, but care must be taken in selecting location for peaches, plums and cherries on account of early frosts in fall and late frost in spring. The leading apples are Baldwin, York Imperial, Stark, Duchesse of Oldenburg, King and R. I. Greening, Stayman's Winesap has been fruited two seasons and gives promise of great value. The leading peaches are Elberta, Crosby, Old Mixon Free, Triumph, Mt. Rose, Early and Late Crawford, Chase Early and Reeve's Favorite. The very early and very late varieties are not profitable.

Very few plums are raised, but where properly cared for the following varieties have done well: Lombard, Wild Goose, Abundance, Burbank, Satsuma, Berkman and Red June. Cherries do well wherever apples succeed. Black Tartarian, Florence, Napoleon, B. Early Richmond, Louis Philip and Montmorency have been grown

with profit. The leading pears are Bartlett, Seckel, Manning's Elizabeth, Howell and Kieffer.

From reports furnished, we believe much of the high land could be profitably planted with peaches, as they grow well and the market for them is good. Winter apples of high grade can certainly be grown with profit.

#### MIFFLIN COUNTY.

The climate is too mild for high grade winter apples. It is well suited to peaches, pears, summer and fall apples, plums and grapes. All kinds of fruit grow well if properly cared for. The county is composed of a number of narrow valleys running back from the river, between ridges of varying height. On the ridges and some of the elevated narrow valleys are to be found many pockets of excellent fruit soil, deep and rich in mineral food, also a great many stretches of thin slate land. Many farmers have made the mistake of planting peaches on this thin slate land and after several years of work and waiting, dug up their trees in disgust and declare that there is no profit in fruit. Yet no finer peaches have ever been grown than those raised in properly located orchards in Mifflin county. The leading apples are Baldwin, Ben Davis, York Imperial and Rome Beauty for winter, Smokehouse and Maiden's Blush and Northern Spy for fall, Early Harvest and Summer Rambo for summer. The leading peaches are Elberta, Late Crawford, Mt. Rose, Chair's Choice, Beer's Smock, Globe and Stump. The leading pears are Bartlett, Clapp's Favorite, Flemish Beauty, Seckel and Kieffer. The leading plums are Lombard, Wild Goose, Burbank and Abundance. Cherries—Gov. Wood, English Morello and Early Richmond.

#### MONTGOMERY COUNTY.

This being a dairy county, little attention is paid to fruit. There is a great variety of soil and much good fruit land that could be utilized. All kinds of fruit do well on high ground, and local markets are plenty. Strawberries are raised to some extent for the Philadelphia market. A number of peach orchards are being planted. Many farmers are still plowing and planting steep hillsides in farm crops at a loss, which could be planted to apples, pears and peaches with profit.

#### MONTOUR COUNTY.

Practically no attention has been paid to commercial fruit culture, but from its location and elevation we would judge that all kinds of fruit can be raised, the altitude being from 700 to 1,000 feet above sea level.

## NORTHAMPTON COUNTY.

The soil seems to be naturally adapted to all kinds of fruit, but the business is very much neglected. The best apple orchards are planted at the base of the mountains. The winter varieties, Baldwin, Ben Davis, Belleflower, Smith's Cider and Peck's Pleasant, are most profitable. The summer and fall varieties are not so desirable. Few peaches are grown. Beer's Smock, Reeve's Favorite, Champion, Globe, Late Crawford and Old Mixon Free have been tried with moderate success. Bartlett, Seckel, Clapp's Favorite and Kieffer pears have been grown. From reports furnished it would seem that the only fruit that has been grown with much profit is the winter apple.

## NORTHUMBERLAND COUNTY.

Farmers are just beginning to take proper care of their orchards. They have the soil and location suited to the growth of all kinds of fruit, and the local markets in which to sell. In addition, they have excellent railroad facilities to reach markets more remote. The best orchards are found on the ridges on either loam, red shale or gravel soil. The leading apples are Baldwin, Smokehouse, Belleflower, Summer Rambo, Yellow Transparent, Northern Spy, Early Harvest and Maiden's Blush. The leading pears are Bartlett, Clapp's Favorite, Flenish Beauty, Sheldon and Kieffer. Peaches—Early and Late Crawford, Old Mixon, Foster and Mt. Rose. Plums—Green Gage, German Prune, Wild Goose, Purple Niagara and Abundance. Some small fruits are grown for local market, but none are shipped out of the county.

## PERRY COUNTY.

This should become one of the leading fruit counties of the State. It is crossed by several mountain ranges, between which are found elevated valleys and moderately sloping hills, with deep, sandy and loamy soil, often filled with broken stone rich in iron, on which all kinds of fruit will grow in perfection, but especially apples and peaches. It has good railroad facilities for reaching all parts of the State. The farmers are beginning to realize their advantages and are planting extensively in some sections, but have not given their orchards the attention they require.

Owing to the mild climate, all fruit should be planted on high ground. Apples grown from 100 to 500 feet above the level of the Juniata river keep better than those grown on lower land. It is a great country for cherries. All kinds, both sweet and sour bear enormous crops, but little attention has been paid to the finer sorts. The leading apples are Summer Rambo, Smokehouse, Baldwin,

Maiden's Blush and York Imperial. Peaches—Elberta, Late Crawford, Globe, Old Mixon and Stump. Salway does well in certain places. The leading pears are Bartlett, Seckel, Duchesse and Clapp's Favorite.

#### PIKE COUNTY.

Owing to its high altitude, Pike county is especially adapted to the production of winter apples of highest grade. Here can be grown Northern Spy, Baldwin, King, Spitzenburg, Grime's Golden and Gilliflower. No attention is paid to orchards. The trees simply grow wild, and produce the finest fruit. Most varieties of pear do well. Bartlett, Seckel and Duchesse can be easily grown. Plums and cherries succeed in some places, but peaches are uncertain.

#### POTTER COUNTY.

The industry is undeveloped. Apples, pears and plums succeed as far as tried, on comparatively low land as well as elevated. Peaches have not been grown to any extent. Red Astrachan and Early Harvest apples are grown for summer, King, Baldwin and Spy for winter.

#### SCHUYLKILL COUNTY.

The character of the soil varies greatly according to the geological formation. The mountain ranges trend N. E. and S. W. Fruit has been planted to some extent on the ridges between the mountains at an altitude of from 500 to 900 feet above the Schuylkill river, with fair success. The peach orchards are located on the eastern slopes and level uplands formerly timbered with chestnut, while apples are doing better on the lower levels where the soil is rather deeper and more clayey. At present fruit is only grown to supply local demand at the mines. None is shipped out of the county. The land seems to have little natural fertility, it is too porous on the hills, while on the low lands is usually found a tenacious clay resting on an impervious hard pan. The leading apples are Baldwin, Smokehouse, Summer Rambo, Grime's Golden, Winesap and Maiden's Blush. Pears—Bartlett, Clapp's Favorite, Seckel and Kieffer.

Peaches—Iron Mountain, Elberta, Mt. Rose, Early and Late Crawford, Old Mixon and Stump. Plums and Cherries are not grown to any extent for market, being liable to insect injury, rot and black knot. Only sour cherries and seedlings are grown. There is little demand for quinces, and none are grown outside of gardens.



## SNYDER COUNTY.

On the ridges of Snyder county is found deep, black ironstone soil, strongly impregnated with iron, which is the very best for peaches. Large orchards have been planted in recent years, many of which have already come into profit. On these ridges the later varieties of peaches can be grown. Salway has been planted in large quantities, and is pronounced the money maker. The following are also grown with much profit: Bilyeus Late October, Smock, Fords, Chair's Choice, Elberta, Stump and Beer's Smock.

Apples are only grown for home consumption, but the soil and climate seem well suited to them, especially the fall and early winter varieties. Summer Rambo, Smokehouse, Baldwin, Yellow Transparent, Red Astrachan, York Imperial and Belleflower have been grown successfully. The leading pears are Bartlett, Clapp's Favorite, Lawrence and Kieffer. The leading plums are abundance, Burbank and Imperial Gage. Cherries—Black Tartarian, Windsor, Montmorency and Early Richmond. Small fruits are grown by a few farmers for market, but the plantations are small and only worked as side issues. A few intelligent, energetic men have planted orchards, and by their judicious care have made them so profitable that quite an interest has been manifested lately all over the county, and if the same good judgment is exercised in the selection of sites for orchards as was shown when the first were planted, Snyder county is destined to make a name for herself shortly in the fruit markets of the country.

## SOMERSET COUNTY.

With its rolling surface and many high hills, Somerset county furnishes many excellent locations for orchards. Owing to distance from market, little attention has been paid to commercial fruit culture, but mining towns that have sprung up within recent years, offer a good home market and orchards are being planted. If care is taken to plant above the frost line, all kinds of fruit can be grown to perfection. On the higher altitudes the Albemarle Pippin succeeds, and there is no more profitable market sort. Baldwin, Northern Spy, Twenty Ounce and Early Harvest succeed well, also a native seedling, called Spice Apple. The latter beings ripening in August and continues ripening until October and can be kept until March. It has a very rich, aromatic and acid flavor and is a good cooker.

The leading peaches are Alexander, Early Rivers, Mt. Rose, Champion, Lemon Free and Stump. Plums—Lombard and German Prune. All kinds of cherries do well, but no attention has been paid to the finer sorts. Concord, Worden, Salem, Niagara and Moore's Early grapes do well, if planted above frost line. If care is not taken in



this, the blossoms are apt to be killed by late frosts, and this is true of all other fruit, even apples.

#### SULLIVAN COUNTY.

The timber has just been removed from the greater part of the land, and farmers are only beginning to turn their attention to agriculture. Owing to its elevation, winter apples of high grade can be grown. Baldwin, Northern Spy, King, R. I. Greening, Spitzenburg and Grime's Golden should succeed well. Peaches are flourishing at an altitude of 1,500 feet above sea level. Freight rates are very high, as there is only one railroad in the county. Another road, however, will most likely be built soon. This will cause competition and freight rates will be lowered.

#### SUSQUEHANNA COUNTY.

This is a dairy county. Very little attention has been paid to commercial fruit culture, as freight rates are very high. The soil and climate are well suited to apples and pears. Peaches, plums and cherries are uncertain. Baldwin, Northern Spy, R. I. Greening, Gilliflower and King apples flourish and produce large crops of the finest fruit without special care. The industry cannot be made profitable unless lower freight rates can be secured.

#### TIOGA COUNTY.

This is not a peach county, although more peaches could be grown if attention were paid to location of the orchard. The red shale lands which abound in the county produce high colored, fine flavored apples, the very best of their kind. Plantations for market should contain high grade winter sorts, such as Baldwin, Spy, Hubbardson, King, etc. No sweet apples are grown as they do not sell well on the general market. Pears can be grown, also European and Japan plums, and both sweet and sour cherries. Orchards are very much neglected.

#### UNION COUNTY.

Farmers are engaged in raising cereal crops, and do not pay any attention to fruit. Many grow enough for family use, and sell the surplus in the nearest market. Many hillsides and elevated fields offer excellent sites for orchards, with congenial soil and climate. Some peaches are grown for market.

The leading apples are Baldwin, Smokehouse, Early Harvest and Red Astrachan. Pears—Bartlett, Clapp's, Seckel, Kieffer. Peaches—Alexander, Early and Late Crawford, Mt. Rose, Elberta, Stump, Old Mixon and Fox Seedling. Plums—Imperial Gage, Peach, Abund-

ance, Burbank, Red June and Satsuma. Cherries—Coes Transparent, Early Purple Guine, Montmorency Ordinary, English Morello, Richmond. Grapes—Concord, Delaware, Catawba, Niagara.

#### VENANGO COUNTY.

No attention has been paid to the cultivation of fruit. Farmers grow enough for their own use. There are a few small orchards that supply local markets. The soil and climate is suitable for apples and pears. Peaches are uncertain, as the winters are cold, the thermometer often falling to 15 degrees below zero. They are grown in small quantities in favored locations.

The following varieties have been grown. Apples—Baldwin, Northern Spy, Red Astrachan, King, Twenty Ounce, Duchesse of Oldenburg, Early Harvest. Pears—Bartlett, Clapp's Favorite, Kieffer and a local variety named Koonce, which is very large, ripens in August and sells well in the local markets. Peaches—Champion, Crosby, Elberta, Late Crawford, Old Mixon and Mt. Rose. Plums—Abundance, Burbank and German Prune. Grapes—Concord, Moore's Early, Niagara and Catawba.

#### WARREN COUNTY.

This is an oil region. No attention has been paid to fruit. A few orchards have been planted quite recently, which give promise of success. Apples do well wherever found in the county, but freight rates are so high that farmers are deterred from planting on a commercial scale. With a canning factory to utilize their product the fruit industry might be made profitable, as apples, pears, cherries and plums of the finest kind can be grown with proper care and attention.

#### WASHINGTON COUNTY.

The farmers of Washington county have given their attention almost exclusively to the raising of sheep, and have neglected fruit altogether. Many of the hillsides and hilltops could be profitably utilized by planting in orchards and the two industries flourish well together. No better plan of management can be adopted for an apple or pear orchard, than to seed it down to grass when it has reached a bearing age and pasture it with sheep. Farmers are beginning to plant apples, peaches, pears and plums. Owing to the mild climate, winter apples, such as Baldwin, Spy and King ripen in the fall, so that care must be taken in the selection of location. Peaches, pears, plums, grapes and small fruits when properly cared for seem to do well and promise to make profitable returns. The

leading apples are Rome Beauty, Grime's Golden, Rambo, Northern Spy, Yellow Transparent, Duchesse of Oldenburg and Summer Rambo. Pears—Bartlett and Kieffer. Peaches—Elberta, Champion, Mt. Rose, Late Crawford, Stump and Old Mixon. Cherries—Yellow Spanish, Black Tartarian, Early Richmond. Leading plums are Damson, Lombard and Shipper's Pride.

#### WAYNE COUNTY.

This is a dairy county, but altitude and soil are so favorable to apples that we find them growing wild in the pastures and on the hillsides. The finest winter varieties can be grown. Peaches can be grown if proper location is selected. Fruit trees are not cared for, and the fruit is roughly handled and carelessly packed. As a consequence prices received for Wayne county fruit have not been satisfactory, and the shippers have become discouraged. If the apple trees now standing in the county were properly cared for, and the fruit carefully graded and packed, it would command top prices in any market. The leading apples are Baldwin, Northern Spy, King, Hubbardston and Duchesse of Oldenburg. In addition, Mammoth Pippin, Seek-no-farther, Black Gilliflower, and Cooper's Market are highly recommended. York Imperial is on trial, but too young yet to bear. The leading peaches are Triumph, Globe, Old Mixon, Crawford's Early, Elberta, Crosby and Crawford's Late. These have all been successfully fruited by Mr. E. E. Avery, of Dyberry, whose orchard is planted on gravel soil 1,800 feet above sea level, and about 200 feet above water level, and who, after years of experience raising and dealing in fruit, believes that Wayne county is a very good place to grow fruit for market, especially winter apples.

#### WESTMORELAND COUNTY.

Owing to its altitude above sea level, winter apples of high grade can be grown. Peaches can be grown on carefully selected locations. Also cherries, Japan plums and European plums. Little attention has been paid to fruit, but a few commercial orchards have recently been planted, which are not yet in bearing. The soil in the valleys is principally limestone clay, while on the upland, it is more sandy. The best fruit and the largest crops of fruit are grown on these sandy uplands. The leading varieties of apples are Baldwin, Rambo, Ben Davis, Maiden's Blush, Spitzenburg, Early Harvest and Winesap. York Imperial is on trial in many places, but trees are mostly too young to bear. Pears—Bartlett and Kieffer. Peaches—Elberta, Crawford's Early and Late, Mt. Rose, Old Mixon and Crosby. Plums—

Abundance, Green Gage and Wild Goose. Cherries—Black Tartarian, May Duke, English Morello and Early Richmond.

#### WYOMING COUNTY.

What are known as the "Hill Lands" are well adapted to all kinds of fruit. Frost, mildew and blight, injure trees planted on low ground. There are good local markets for all fruit grown and much more attention should be given to the industry. The leading apples are Baldwin, Northern Spy, Ben Davis, R. I. Greening, Gilliflower, Red Astrachan and York Imperial. Pears—Bartlett, Seckel, Flemish Beauty and Kieffer. Peaches—Crosby, Elberta, Old Mixon and Mt. Rose.

#### YORK COUNTY.

The range of low mountains known as the York Hills, which traverse the county in a southeasterly direction seem to furnish all the conditions of soil and climate needed to grow apples, pears, peaches, plums, cherries, and all the small fruits to perfection. On these ridges we find a great variety of soil, but what is known as the iron stone land produces the best fruit, especially peaches. The San José or Pernicious Scale has caused great havoc among orchards all over the county and growers are much discouraged. The leading apples are York Imperial, Grime's Golden, Ben Davis, Smokehouse and Yellow Transparent.

Pears—Bartlett, Clapp's Favorite and Kieffer. Peaches—Mt. Rose, Elberta, Early and Late Crawford, Globe, Smock, Stump, Fox Seedling and Salway. Plums—Wild Goose, German Prune, Green Gage, Abundance and Burbank. Cherries—Napoleon, Gov. Wood, Black Tartarian, Richmond and May Duke. Grapes—Concord and Niagara. Harrisburg and York furnish two excellent markets for all the fruit that can be grown, and the industry was in a very flourishing condition before the appearance of San José Scale.